

Intraosseous Schwannoma of the Mandible

Hasan Onur Simsek, Muge Cina Aksoy, Cagri Can, Timucin Baykul

ABSTRACT

Schwannoma originates from Schwann cells of peripheral nerve sheaths and account for 1% of benign primary bone tumors. The site most commonly involved is the mandible. We present a 47-year-old woman with schwannoma at mandible. Neurosensory examination comprised paresthesia at left side of the mandible. Radiologic examination showed a well-defined unilocular osteolytic lesion which located in the left side of the mandible. The lesion was surgically curetted. The patient is under our follow-up. In this report, clinical and histological features and treatment of the schwannoma are discussed.

Keywords: Schwannoma, Mandible, Benign tumor.

How to cite this article: Simsek HO, Aksoy MC, Can C, Baykul T. Intraosseous Schwannoma of the Mandible. *Int J Exper Dent Sci* 2012;1(1):48-50.

Source of support: Nil

Conflict of interest: None declared

INTRODUCTION

Schwannoma is a benign and encapsulated tumor that originated from Schwann cells of peripheral nerve sheaths. Schwannoma also called by different names in the literature; such as neurinoma and neurilemmoma. Schwannoma is the most common nerve sheath tumor seen in the head and neck region. The site most commonly involved is the mandible.¹⁻⁵

CASE REPORT

A 47-year-old woman with schwannoma at mandible is presented. Neurosensory examination comprised paresthesia at left side of the mandible during 1 year, and the patient reported no previous pain. Clinical examination comprised of first and second molar teeth are extracted. Radiologic examination showed a well-defined unilocular osteolytic lesion which located in the left side of the mandible (Fig. 1). There was not any examination of the patient's systemic disease.

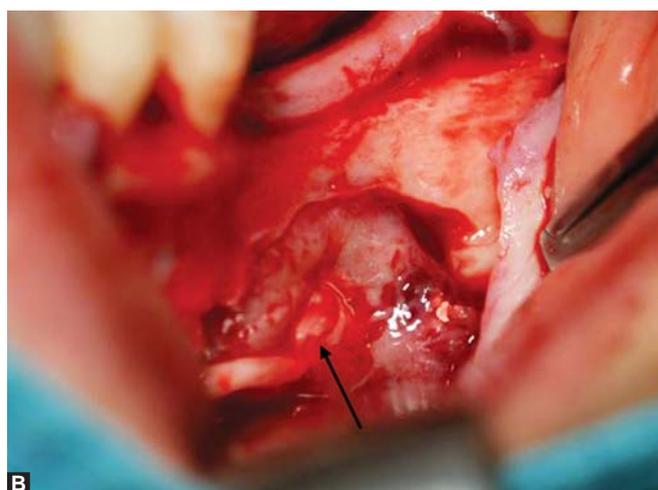
The lesion was surgically curetted under local anesthesia. The lesion was related to nerve alveolaris inferior (Figs 2A and B). Nerve-lesion connections dissected with blunt dissection and lesion curetted continuity of the nerve. Second premolar tooth was treated with root canal therapy.

We sent the specimen for histopathological examination. Histopathological examination was performed with S-100 immunohistochemical staining. Focal areas were seen Verocay objects. The diagnosis was schwannoma.

The patient is still under our follow-up for 20 months (Fig. 3). Control radiographs of the region increase radiopacity in surgical area were observed. Although the



Fig. 1: Radiological examination revealed a large unilocular radiolucent lesion. Histopathological examination confirmed the diagnosis as schwannoma



Figs 2A and B: (A) Schwannoma localized between second molar teeth and second premolar teeth intraorally, (B) Intraoperative image of the lesion

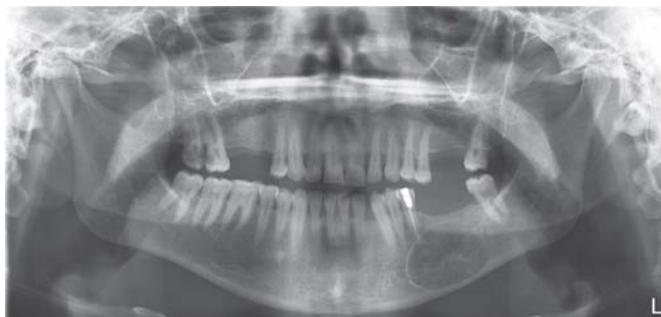


Fig. 3. Postoperative follow-up radiography after 20 months. Control radiographs of the region increase radiopacity in surgical area were observed

findings are improving paresthesia, were not lost completely. The patient continues periodic checks.

DISCUSSION

Schwannoma was first described by Verocay in 1910. Schwannoma also called a neurilemmoma or neurinoma, is a benign neoplasm originating from the peripheral neural sheath. Although the head and neck region is one of the most common sites for benign nerve sheath tumors, intraoral lesions are unusual, particularly in the intraosseous region of the jaw,¹⁻⁵ but also malignant case reports have also been reported rarely.^{6,7} Clinically, schwannoma is a slow-growing tumor that may be present for years before becoming symptomatic.⁸ Swelling is the most common symptom, but pain or paresthesia may be present in about 50% of cases. Schwannoma was also reported in the apical area of the mandibular teeth mimicking a inflammatory periapical lesion.^{9,10} There is a female predilection, with a 1.6:1 female-to-male ratio. Seventy-seven percent of the patients were below the age of 50 at the time of diagnosis, and 46% were below the age of 30. In the literature, Park et al 1999,¹¹ Nakasto et al 2000,³ Lacerda et al 2006,¹² Subhashraj et al 2009,¹³ Jahanshahi 2011¹⁴ were reported cases of schwannoma of the mandible in the molar region. In the presented case, lesion was placed at the second molar and first premolar teeth of the mandible.

The differential diagnosis of intraosseous schwannoma should be made by unilocular radiolucent image of cysts and tumors. A definite diagnosis can be made by histopathology. There are two common histologic patterns: Spindle cells in palisaded whorls and waves surrounded by an acellular eosinophilic zone (Verocay body) (Antoni A pattern) or spindle cells in a haphazard distribution within a fibrillar microcystic matrix (Antoni B pattern). Schwannomas strongly express S-100 protein and are negative for actin and desmin stains.^{15,16} In our case, we sent the specimen for histopathological examination and

immunohistochemical staining was performed with S-100. Microscopic examination of the tumor showed Verocay bodies in palisaded whorls and waves surrounded by spindle cells. The diagnosis was schwannoma.

Large lesions can get in touch with the neurovascular bundle of the alveolaris inferior inside the bone. This may cause a paresthesia in the related site of the lower lip. Especially during the operation of the lesions that perforated the medial cortex and nerve injury are the major complications that may occur. These lesions should be carefully dissected from the surrounding tissues under direct vision in order to decrease the complication risk. In presented case on review after 20 months, the patient had regained most of the sensation of lip with intermittent paresthesia.

The one of the treatment choice for schwannoma is total surgical removal, because of being a benign tumor, having low recurrence and malignant transformation rates. In our case postoperative 20-month clinical and radiological follow-up is observed with no recurrence. In conclusion, it is important to keep in mind that intraosseous schwannoma is the differential diagnosis of the intraosseous mandible tumors and cysts especially, if the patient has a complaint of paresthesia in the lower lip.

REFERENCES

1. Chi AC, Carey J, Muller S. Intraosseous schwannoma of the mandible: A case report and review of the literature. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2003;96:54-65.
2. Günhan Ö. *Oral ve Maksillofasiyal Patoloji*. sf. 138. Ankara, Atlas Kitapçılık, 2001
3. Nakasato T, Katoh K, Ehara S, Tamakawa Y, Hoshino M, Izumizawa M, et al. Intraosseous neurilemmoma of the mandible. *Am J Neuroradiol* 2000;21:1945-47.
4. Murphy J, Giunta JL. Atypical central neurilemmoma of the mandible. *Oral Surg Oral Med Oral Pathol* 1984;59:275-78.
5. Porgel AM. Benign nonodontogenic lesions of the jaws. *Peterson's principles of oral and maxillofacial surgery*. London: BC Decker Inc 2004;2:610.
6. Chao JC, Ho HC, Huang CC, et al. Malignant schwannoma of the mandible: A case report. *Auris Nasus Larynx* 2007;34:287-91.
7. Orhan G, Özgürsoy OB, Kesici GG, Büyükyıldız S, Ekinci C, Küçük Babür. Mandibulada malign schwannom: Olgu sunumu. *KBB ve BBC Dergisi* 2011;19(2):111-14.
8. Martins MD, Jesus LA, Fernandes KP, Bussadori SK, Taghloubi SA, Martins MAT. Intraoral schwannoma: Case report and literature review. *Indian Journal of Dent Res* 2009;20(1):121-25.
9. Martins MD, Taghloubi SA, Bussadori SK, Fernandes KPS, Palo RM, Martins MAT. Intraosseous schwannoma mimicking a periapical lesion on the adjacent tooth: Case report. *International Endodontic Journal* 2007;40:72-78.
10. Buric N, Jovanovic G, Pesic Z, Krasic D, Radovanovic Z, Mihailovic D, et al. Mandible schwannoma (neurilemmoma)

- presenting as periapical lesion. *Dentomaxillofac Radiol* 2009;38(3):178-81.
11. Park YK, Kim YW, Yang MH, Kim EJ, Ryu DM. Neurilemmoma of the mandible. *Skeletal Radiol* 1999;28:536-39.
 12. Lacerda SA, Brentegani LG, Rosa AL, Vespucio MVO, Salata LA. Intraosseous schwannoma of mandibular symphysis: Case report. *Braz Dent J* 2006;17(3):255-58.
 13. Subhashraj K, Balanand S, Pajaniammalle S. Ancient schwannoma arising from mental nerve. A case report and review. *Med Oral Patol Oral Cir Bucal* 2009;14(1):12-14.
 14. Jahanshahi G, Haghighat A, Azmoodeh F. Intraosseous neurilemmoma of the mandible: Report of a rare ancient type. *Dent Res J (Isfahan)* 2011;8(3):150-53.
 15. Manor E, Tetro S, Noyhous M, Kachko P, Bodner L. Translocation (2:13) and other chromosome abnormalities in intraosseous schwannoma of the mandible. *Cancer Genetics and Cytogenetics* 2009;193:116-18.
 16. Bagheri SC, Bell RR, Khan HA. Current therapy in oral and maxillofacial surgery. United States, Elsevier Inc 2012:817.

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